

IN THE CLAIMS:

Claim 1 (Currently Amended): A semiconductor laser ~~of having~~ a distributed feedback ~~type~~ grating for emitting light with plural Fabry-Perot modes having a first gain spectrum and a Bragg grating mode having a second gain spectrum, the laser comprising:

- an active region made of a semiconductor material;
- a Bragg grating for defining the Bragg grating mode;
- a light-reflecting surface for reflecting light generated in the active region; and
- a light-emitting surface ~~providing~~ with an anti-reflective coating thereon, the light-emitting surface with the anti-reflective coating having a reflectivity, the light-emitting surface and the light-reflecting surface ~~form~~ forming a Fabry-Perot resonator combined with the active region ~~therebetween~~ for defining the plural Fabry-Perot modes,

wherein the reflectivity of the light-emitting surface has a minimum at a wavelength where ~~an the first~~ the first gain spectrum ~~attributed to of~~ the Fabry-Perot modes ~~is becomes~~ a maximum at a predetermined temperature temperatures where the maximum of the first gain spectrum of the Fabry-Perot modes is greater than the maximum of the second gain spectrum of the Bragg grating mode.

Claim 2 (Currently Amended): The semiconductor laser ~~of the distributed feedback type~~ according to claim 1, wherein

the minimum reflectivity of the light-emitting surface with the anti-reflective coating is smaller than 0.3%.

Claim 3 (Currently Amended): The semiconductor laser ~~of the distributed feedback type~~ according to claim 2, wherein

the minimum reflectivity of the light-emitting surface with the anti-reflective coating is smaller than 0.1%.

Claim 4 (Canceled).

Claim 5 (Currently Amended): The semiconductor laser ~~of the distributed feedback type~~ according to claim 1,

~~wherein the laser further includes a first wavelength of the Bragg grating mode, and a second wavelength at which the gain attributed to the Fabry-Perot modes is the maximum, the~~
wherein a first wavelength of the Bragg grating mode is greater than the a second wavelength where the second gain spectrum of the Fabry-Perot mode becomes the maximum at the predetermined temperature temperatures where the maximum of the first gain spectrum of the Fabry-Perot modes is greater than the maximum of the second gain spectrum of the Bragg grating mode.

Claim 6 (Currently Amended); The semiconductor laser ~~of the distributed feedback type~~ according to claim 1,

~~wherein the laser further includes a first wavelength of the Bragg grating mode is the maximum, and a second wavelength at which the gain attributed to the Fabry-Perot mode is the maximum,~~

wherein a difference between the a first wavelength of the Bragg grating mode and the a second wavelength being from where the second gain spectrum of the Fabry-Perot mode becomes the maximum is -7 nm to +8 nm at a room temperature.

Claim 7 (Currently Amended): The semiconductor laser ~~of the distributed feedback type~~ according to claim 1,

wherein the predetermined temperature the temperature where the maximum of the first gain spectrum of the Fabry-Perot modes is greater than the maximum of the second gain spectrum of the Bragg grating mode is -40°C.

Claim 8 (Currently Amended): The semiconductor laser ~~of the distributed feedback type~~ according to claim 1,

wherein the active region is made of InGaAsP with a band gap energy corresponding to 1.55 μm wavelength band.

Claim 9 (Currently Amended): A semiconductor laser ~~of having~~ a distributed feedback ~~type~~ grating for emitting light with plural Fabry-Perot modes and a Bragg grating mode, the laser comprising:

an active region made of InGaAsP for generating luminescence,
a Bragg grating for defining the Bragg grating mode;
a light-reflecting surface for reflecting light generated in the active region; and
a light-emitting surface providing with an anti-reflective coating thereon, the light-emitting surface with the anti-reflective coating having a reflectivity, the light-emitting surface and the light-reflecting surface ~~forms~~ forming a Fabry-Perot resonator combined with the active region ~~therebetween~~ for defining the plural Fabry-Perot modes,

wherein the reflectivity of the light-emitting surface has a minimum at a ~~predetermined~~ wavelength 45 nm smaller than a ~~specific~~ wavelength at which a magnitude of the luminescence from the active region is maximum at a room temperature.

Claim 10 (Canceled).

Claim 11 (Currently Amended): The semiconductor laser ~~of the distributed feedback type~~ according to claim 9,

wherein the minimum reflectivity of the light-emitting surface with the anti-reflective coating is smaller than 0.3%.

Claim 12 (Currently Amended): The semiconductor laser ~~of the distributed feedback~~
~~type~~ according to claim 11,

wherein the minimum reflectivity of the light-emitting surface with the anti-reflective
coating is smaller than 0.1%.